

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) Medical implant system, comprising: with
an implant made of a composite material in which glass fibers are embedded,
a sensor element which is embedded in the implant, and comprises said sensor element
comprising at least one of the glass fibers, being coupled to
a measuring device coupled to the glass fiber of the sensor element, said measuring
device determining which determines one of a physical property of the sensor element, an or its
environment of the sensor element, or changing of this a change in the physical property,
wherein:
the glass fiber of the sensor element is connected to a transducer, which exchanges
signals with the measuring device without a physical connection, and
the glass fibers are embedded in the composite material as mechanical reinforcement in
the form of a woven fabric, a knitted fabric or a fleece.
2. (Original) Implant system according to Claim 1, wherein the glass fibers are distributed in the
composite material over the entire extent of the implant.
3. (Original) Implant system according to Claim 1, wherein the measuring device feeds
electromagnetic radiation into the sensor element and determines physical properties of the
sensor element or of its environment from the type of radiation that passes through and/or is
reflected.
4. (Withdrawn) Implant system according to Claim 3, wherein the glass fiber of the sensor

element is provided with a radiation-reflecting coating.

5. (Currently amended) Implant system according to Claim 1, wherein the sensor element substantially consists of the glass fiber forming which comprises a sensor fiber.

6. (Original) Implant system according to Claim 5, wherein at least one region acting as a Bragg grating is incorporated in the sensor fiber.

7. (Withdrawn - Currently amended) Implant system according to Claim 5, wherein:
the sensor element substantially consists of the glass fiber which comprises a sensor fiber,
and
a substance that is induced to fluoresce by the fed-in electromagnetic radiation is
embedded in the sensor fiber, and the
fluorescent properties of which the substance undergo changes under the effect of the a
chemical environment outside the sensor fiber is embedded in the sensor fiber.

8. (Withdrawn - Currently amended) Implant system according to Claim 4, wherein the radiation-reflecting coating consists of a substance which changes the a reflection behavior for the electromagnetic radiation in the sensor fiber under the effect of the a chemical environment outside the sensor fiber.

9. (Withdrawn) Implant system according to Claim 1, wherein the sensor element comprises the glass fiber and a further sensor member, which is coupled to the measuring device via the glass fiber.

10. (Withdrawn - Currently amended) Implant system according to Claim 9, wherein the sensor member is a pressure sensor with a flexible membrane and a mirror element which can be moved by the latter and reflects the electromagnetic radiation fed into the glass fiber differently

according to position.

11. (Withdrawn) Implant system according to Claim 9, wherein the sensor member is a Fabry-Pérot interferometer.

12. (Withdrawn - Currently amended) Implant system according to Claim 11, wherein: in the Fabry-Pérot interferometer is formed as a thin-film interferometer that is brought into contact with ~~the~~ an end of the glass fiber, and ~~the~~ an active film of ~~which~~ the thin-film interferometer undergoes dimensional changes under the influence of the environment.

13. (Withdrawn - Currently amended) Implant system according to Claim 11, wherein the Fabry-Pérot interferometer comprises two glass fibers with polished end faces, ~~the~~ a spacing (B) between which can be changed by environmental influences.

14. (Currently amended) Implant system according to Claim 1, wherein Medical implant system, comprising:

an implant made of a composite material in which glass fibers are embedded,
a sensor element which is embedded in the implant, said sensor element comprising at
least one of the glass fibers,

a measuring device coupled to the glass fiber of the sensor element, said measuring
device determining one of a physical property of the sensor element, an environment of the
sensor element, or a change in the physical property,

wherein:

the glass fiber of the sensor element is connected directly to the measuring device, and
the glass fibers are embedded in the composite material as mechanical reinforcement in
the form of a woven fabric, a knitted fabric or a fleece.

15. (Currently amended) Implant system according to Claim 14, wherein the measuring device is a microcontroller that is capable of being implanted in ~~the~~ a body.

16. (Currently amended) Implant system according to Claim 16 1, wherein the glass fiber is connected to a transducer, which exchanges signals with the measuring device without a physical connection.

17. (Currently amended) Implant system according to Claim 16 1, wherein the transducer is capable of being implanted in ~~the~~ a body.

18. (Currently amended) Implant system according to Claim 16 1, wherein the ~~transformer~~ transducer is a ~~transducer~~ transponder.

19. (Currently amended) Implant system according to Claim 16 1, wherein the transducer is a light source which has an associated light receiver.

20. (Currently amended) Implant system according to Claim 19, wherein the light source emits electromagnetic radiation in ~~the~~ a range between 650 and 1000 nm.

21. (Currently amended) ~~Implant system according to Claim 1, wherein~~ Medical implant system, comprising:

an implant made of a composite material in which glass fibers are embedded,

a sensor element which is embedded in the implant, said sensor element comprising at least one of the glass fibers,

a measuring device coupled to the glass fiber of the sensor element, said measuring device determining one of a physical property of the sensor element, an environment of the sensor element, or a change in the physical property,

wherein:

the measuring device has an associated radiation transmitter, which transports radiation into the interior of the implant via a at least one of said glass fibers embedded in the implant, and the glass fibers are embedded in the composite material as mechanical reinforcement in the form of a woven fabric, a knitted fabric or a fleece.

22. (Currently amended) Implant system according to Claim 21, wherein the transport of the radiation takes place via the glass fiber of a the sensor element.

23. (Currently amended) Implant system according to Claim 21, wherein the transport of the radiation takes place via a glass fiber which is embedded in the implant in addition to the glass fiber of a the sensor element.

24. (Original) Implant system according to Claim 21, wherein the wavelength and intensity of the transported radiation are chosen such that the radiation induces mechanical and/or material changes in the composite material of the implant.

25. (Original) Implant system according to Claim 21, wherein the measuring device and the radiation transmitter have an associated controller, which activates the radiation transmitter in dependence on the measured variables of the measuring device.